Original Article

Abnormal Placentation in Patients with Previous Caesarean Section

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ABSTRACT

Objective: To determine the frequency of abnormal placentation in patients with previous caesarean section.
Study Design: Descriptive study.
Place and Duration of Study: This study was conducted at the Department of Obstetrics and Gynecology, Civil Hospital Quetta for a period of one year, from 1st June 2020, to 30th June 2021.
Materials and Methods: A total of 156 patients were evaluated and studied. All cases of placenta previa with previous caesarean scar after 32 weeks of gestation whether booked or unbooked with no demarcation of age, irrespective to number of caesarean scars with or without bleeding per vagina were included in the study. All cases of previous myomectomy, uterine repair, placental abruption and bleeding per vagina due to local cause were excluded. A questionnaire was developed that included detailed information regarding maternal age, parity, gestational age, number of previous caesarean deliveries, history of bleeding per vagina, ultrasound findings and Doppler flow studies. Patients fulfilling the inclusion criteria were selected. Patients were divided into four groups according to number of previous caesarean sections and labeled as; Group A previous one caesarean section, Group B previous two caesarean sections, Group C previous three caesarean sections and Group D previous four caesarean sections. All the data were collected on pre-designed pro-forma. The data was entered and analyzed in SPSS version 18. Descriptive statistics were used to analysis the mentioned continuous variables. Chi-square independent test were used to determine the proportions difference between number of previous C-section and abnormal adherence placenta. A p- value of ≤ 0.05 were considered as significant.
Results: The average age of the women was 27.02±5.13 year's patients ranged between 18-35 years of age. Median age was 27 years. Mean gestational age was 35.79±2.07 ranging between 33-39 weeks. Similarly, number of previous cesarean section was 2.53±1.12 and the parity was found 4.66±2.28 respectively. 74(47%) women had already booked the status for cesarean section. Presentation of pregnant cases with previous C-section, 81(52%) women had symptomatic and 71(45.5%) had asymptomatic presentation. Age distribution of the patients was done; where in 85 patients accounted for 57.1% were age found more than 26 years. Gestational age of the patients revealed 99(63.5%) between 33-36 weeks, 57(36.5%) between 33-36 weeks, and 80 between 37-39 weeks. Degree of placenta Previa revealed 115 (74%) with major degree Previa and 41(26%) with minor degree Previa. The frequency of abnormal placenta Previa was found in Placenta accrete was 8(5.1%), placenta Percreta was 17(10.9%) while it was 28(17.9%) in placenta increta respectively. The percentage of placenta previa showed a rising value with increased number of caesarean scars as it was 23.7% in previous one caesarean section, 26.3% in previous two and 23.7% and 26.3% in previous three and four caesarean sections.
Conclusion: During the one-year study, 156 patients presented with placenta Previa. The study showed that the incidence of the condition increased with increased number of caesarean sections.

Key Words: Abnormal Placentation, Patients, Caesarean Section

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INTRODUCTION

Placenta previa is a type of deformed placenta in which the placenta is located at the base of the cervix which closes completely or partially the internal ostium of the cervix. It is one of the leading causes of vaginal bleeding in the third trimester[1]. Along with blood loss, a woman with placenta previa may experience complications such as premature birth[2]. Placenta previa is found to be associated with a higher rate of morbidity and mortality in both mother and newborn, with an average increase of 10%[3,4]. This is not a common pregnancy problem as about 1 in 533 pregnant women can have a placenta previa[5]. The tendency for placenta previa growth has been detected over the past decade, largely due to an increase in grade C and maternal growth during pregnancy[6]. The risk of placenta adherence, a life-threatening condition increases with each preterm birth by 37.5% which may be due to the

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fact that endometrial cells found near the scar cannot properly differentiate leading to implantation of the implant[7]. One study reported that 208 of the 232 (89.7%) cases of placenta previa underwent selective or emergency cesarean hysterectomy[8].

The history and number of preterm births are important for placenta previa and abnormal placenta in subsequent pregnancies. Repetitive surgery is performed at our facility and today we are dealing with many patients with placenta previa requiring hysterectomy, so we will conduct this study to assess the frequency of abnormal placentation in patients with previous C-section based on previous surgery rates. delivery.

MATERIALS AND METHODS

This study was conducted at the Department of Obstetrics and Gynecology, Civil Hospital Quetta for a period of one year, from 1st June 2020, to 30th June 2021. A total of 156 patients were evaluated and studied. All cases of placenta previa with previous caesarean scar after 32 weeks of gestation whether booked or unbooked with no demarcation of age, irrespective to number of caesarean scars with or without bleeding per vagina were included in the study. All cases of previous myomectomy, uterine repair, placental abruption and bleeding per vagina due to local cause were excluded. A questionnaire was developed that included detailed information regarding maternal age, parity, gestational age, number of previous caesarean deliveries, history of bleeding per vagina, ultrasound findings and Doppler flow studies. Patients fulfilling the inclusion criteria were selected. Patients were divided into four groups according to number of previous caesarean sections and labeled as; Group A previous one caesarean section, Group B previous two caesarean sections, Group C previous three caesarean sections and Group D previous four caesarean sections. All the data were collected on pre-designed pro-forma. The data was entered and analyzed in SPSS version 18. Descriptive statistics were used to analysis the mentioned continuous variables. Chi-square independent test were used to determine the proportions difference between number of previous C-section and abnormal adherence placenta. A p-value of ≤ 0.05 were considered as significant.

RESULTS

The average age of the women was 27.02±5.13 year's patients ranged between 18-35 years of age. Median age was 27 years. Mean gestational age was 35.79±2.07 ranging between 33-39 weeks. Similarly, number of previous cesarean section was 2.53±1.12 and the parity was found 4.66±2.28 respectively. 74(47%) women had already booked the status for cesarean section. Presentation of pregnant cases with previous C-section, 81(52%) women had symptomatic and 71(45.5%) had asymptomatic presentation. Age distribution of the patients was done; where in 85 patients accounted for 57.1% were age found more than 26 years. Gestational age of the patients revealed 99(63.5%) between 33-36 weeks, 57(36.5%) between 33-36 weeks, and 80 between 37-39 weeks.

Table No.1: Descriptive statistics of the study subjects.

Descriptive Statistics	Mean	Range (Max-Min)	Median
Parity	4.66±2.28	(8-1)	5
Gestational Age	35.79±2.07	(39-33)	36
Number Previous CS	2.53±1.12	(4-1)	2.5
Age	27.02±5.13	(35-18)	27

Table No.2: Stratified of Placenta Percreta among different confounding variable of the study subjects

Study Characteristics	**Placenta Percreta**			**P-value**
Age Groups				
<=26 Years	11(7.1%)	56(35.9%)	67(42.9%)	0.048*
>26 Years	6(3.8%)	83(53.2%)	89(57.1%)	
Total	17(10.9%)	139(89.1%)	156(100%)	
Gestational Age				
33-36 Weeks	11 (7.1%)	88 (56.4%)	99 (63.5%)	0.91
37-396 Weeks	6(3.8%)	51(32.7%)	57(36.5%)	
Total	17(10.9%)	139(89.1%)	156(100%)	
Grades				
Major (3 or 4)	8(5.1%)	107(68.6%)	115(73.7%)	0.008*
Minor (1 or 2)	9(5.8%)	32(20.5%)	41(26.3%)	
Total	17(10.9%)	139(89.1%)	156(100%)	
Number Previous CS				
1	5(3.2%)	32(20.5%)	37(23.7%)	0.832
2	5(3.2%)	36(23.1%)	41(26.3%)	
3	4(2.6%)	33(21.2%)	37(23.7%)	
4	3(1.9%)	38(24.4%)	41(26.3%)	
Total	17(10.9%)	139(89.1%)	156(100%)	

Degree of placenta Previa revealed 115 (74%) with major degree Previa and 41(26%) with minor degree Previa. The frequency of abnormal placenta Previa was found in Placenta accrete was 8(5.1%), placenta Percreta was 17(10.9%) while it was 28(17.9%) in placenta increta respectively. The percentage of

placenta previa showed a rising value with increased number of caesarean scars as it was 23.7% in previous one caesarean section, 26.3% in previous two and 23.7% and 26.3% in previous three and four caesarean sections. See tables 1 to 4.

Table No.3: Stratified of Placenta accreta among different confounding variable of the study subjects

Study Charac-teristics	Placenta Accreta			P-value
Gestational Age				
33-36 Weeks	7(4.5%)	92(59%)	99(63.5%)	0.147
37-396 Weeks	1(0.6%)	56(35.9%)	57(36.5%)	
Total	8(5.1%)	148(94.9%)	156(100%)	
Grades				
Major (3 or 4)	3(1.9%)	112(71.8%)	115(73.7%)	0.017*
Minor (1 or 2)	5(3.2%)	36(23.1%)	41(26.3%)	
Total	8(5.1%)	148(94.9%)	156(100%)	
Number Previous CS				
1	2(1.3%)	35(22.4%)	37(23.7%)	0.412
2	1(0.6%)	40(25.6%)	41(26.3%)	
3	1(0.6%)	36(23.1%)	37(23.7%)	
4	4(2.6%)	37(23.7%)	41(26.3%)	
Total	8(5.1%)	148(94.9%)	156(100%)	

Table No.4: Stratified of Placenta increta among different confounding variable of the study subjects

Study Charac-teristics	Placenta Increta			P-value
	Yes	No	Total	
Gestational Age (Weeks)				
33-36 Weeks	8(5.1%)	91(58.3%)	99(63.5%)	<0.001 *
37-396 Weeks	20(12.8%)	37(23.7%)	57(36.5%)	
Total	28(17.9%)	128(82.1%)	156(100%)	
Grades				
Major (3 or 4)	23(14.7%)	92(59%)	115(73.7%)	0.264
Minor (1 or 2)	5(3.2%)	36(23.1%)	41(26.3%)	
Total	28(17.9%)	128(82.1%)	156(100%)	
No. of Previous CS				
1	4(2.6%)	33(21.2%)	37(23.7%)	0.192
2	11(7.1%)	30(19.2%)	41(26.3%)	
3	8(5.1%)	29(18.6%)	37(23.7%)	
4	5(3.2%)	36(23.1%)	41(26.3%)	
Total	28	128	156	

DISCUSSION

The frequency of surgeries is increasing, worldwide with the same rise in maternal mortality and mortality. The high incidence of surgical births today is strongly associated with the high frequency of Placenta previa according to their placenta increta[9]. The incidence of placental abruption has increased dramatically in the last 50 years with the increase in surgical birth rates[10]. The birth rate by surgery has been steadily rising over the past two decades and is a common birth procedure worldwide. Other studies have seen an increase in placental abnormalities among women with a history of preterm labor. The total incidence of placenta previa in large overseas studies was found to be 0.2–0.5%[11]. In our study 3.87% of patients (24 cases in the study group and 7 in the control group) had placenta previa. Demographic data for our sample, as expected, showed an increase in the age of childbirth, and an increase in the number of surgical births. The average age of the mother of our research team was very high compared to other subjects. A study by Hyun Jung Lee in Korea found an average maternal age of 32.8 ± 3.9[12] and a retrospective study conducted at King Khalid University, Abha, SA found an average maternal age of 31.8 ± 4.7 years[13]. A study by Insherah Mansour and Drs. Hala Mousa in Madinah was approximately 34.3 ± 6.0 years old about our own[14].

In our study Patient gestational age was 99 (63.5%) between 33-36 weeks, 57 (36.5%) between 33-36 weeks, and 80 between 37-39 weeks.

Degree of placenta Previa reveals 115 (74%) with large Previa degrees and 41 (26%) with small Previa degrees. The frequency of abnormal placenta previa found in Placenta accreta was 8 (5.1%), placenta Percreta was 17 (10.9%) and 28 (17.9%) in placenta increta respectively. Percentage of placenta Previa showed an increase in the number of increased surgical scars as it was 23.7% in previous surgery, 26.3% in previous two and 23.7% and 26.3% in three and four surgical stages. Our study showed that the frequency of placenta previa did not increase with one previous stage of surgery. Henna et al[4] reported that the previous stage of surgery did not significantly increase the chances of developing placenta previa in subsequent pregnancies. They found a correlation of placenta previa with increased mating and maternal age. Their results support what we find. Almost all of the studies mentioned in this article have been linked to placental previa interactions with maternal age. Research by Ioannis G et al also agrees with our findings and suggests that abnormal placement is associated with fertility, smoking and high blood pressure during pregnancy[15]. Another study by Castro et al showed an association between abnormal placenta and uterine scars along with what they say is a pre-placenta previa pregnancy is also dangerous[16]. Similarly, late pregnancy age is considered a risk factor for placenta previa[17].

CONCLUSION

This study shows that there is a strong association of placenta previa with various surgical stages. In addition, this study showed that the frequency of rare placenta previa was 33.9% among patients with a history of chronic obstetrics. 17 (10.9%) of patients

with placenta percreta, 8 (5.1%) were placenta accreta and 28 (17.9%) of the placenta were found to be an increta. The most common type of abnormal placentation was increa.

An increase in the number of surgical units leads to an increased risk of placenta previa. Increased maturation and maternal growth are associated with the development of the placenta lying down. Care should be taken to avoid initial surgery to avoid complications in subsequent pregnancies. Family size should be well planned and pregnancy in adulthood can be encouraged.

Author's Contribution:

Concept & Design of Study:	Safia Ewaz Ali
Drafting:	Zubia Bugti
Data Analysis:	Rizwana Naz
Revisiting Critically:	Safia Ewaz Ali, Zubia Bugti
Final Approval of version:	Safia Ewaz Ali

Conflict of Interest: The study has no conflict of interest to declare by any author.

REFERENCES

1. Jauniaux E, Grønbeck L, Bunce C, et al. Epidemiology of placenta previa accreta: a systematic review and meta-analysis. BMJ Open 2019;9:e031193.
2. Jansen C, Kleinrouweler C, van Leeuwen L, Ruiter L, Mol B, Pajkrt E. Which second trimester placenta previa remains a placenta previa in the third trimester: A prospective cohort study. Eur J Obstet Gynecol Reproductive Biol 2020;254: 119-123.
3. Anderson-Bagga FM, Sze A. Placenta Previa. StatPearls. 2021 Jan. https://www.ncbi.nlm.nih.gov /books/NBK539818/
4. Heena AB, Kumari G. Retrospective study of placenta accreta, placenta increta and placenta percreta in Peripartum hysterectomy specimens. Indian J Pathol Microbiol 2020;63,Suppl S1:87-90.
5. Moeini R, Dalili H, Kavyani Z, Shariat M, Charousaei H, Akhondzadeh A, et al. Maternal and neonatal outcomes of abnormal placentation: a case–control study. J Maternal-Fetal Neonatal Med 2020:1-7.
6. Ozer A, Sakalli H. Analysis of maternal and neonatal outcomes in different types of placenta previa and in previa-accreta coexistence. J Clin Anal Med 2017;8(4):341–345.
7. Matalliotakis M, Velegrakis A, Goulielmos G, Niraki E, Patelarou A, Matalliotakis I. Association of placenta previa with a history of previous Cesarian deliveries and indications for a possible role of a genetic component. Balkan J Med Genetics 2017;20(2):5-9.
8. Jauniaux E, Bidhe A. Prenatal ultrasound diagnosis and outcome of placenta previa accreta after caesarean delivery: A systematic review and meta-analysis. Am J Obstet Gynecol 2017;217: 27– 36.
9. Seoud MA, Nasr R, Berjawi GA, et al. Placenta accreta: Elective versus emergent delivery as a major predictor of blood loss. J Neonatal Perinatal Med 2017;10:9– 15.
10. Ibrahim T. Efficacy of tranexamic acid in reducing blood loss, blood and blood products requirements in Cesarian sections for patients with placenta accreta. Ain-Shams J Anesthesiol 2019;11(1).
11. Ozdemirci S, Akpinar F, Baser E, Bilge M, Unlubilgin E, Yucel A, et al. Effect of the delivery way and number of parity in the subsequent incidence of placenta previa. J Maternal-Fetal Neonatal Med 2019;33(19):3238-3243.
12. Lee H, Lee Y, Ahn E, Kim H, Jung S, Chang S et al. Risk factors for massive postpartum bleeding in pregnancies in which incomplete placenta previa are located on the posterior uterine wall. Obstet Gynecol Sci 2017;60(6):520.
13. Biler A, Ekin A, Ozcan A, Inan AH, Vural T, Toz E. Is it safe to have multiple repeat cesarean sections? A high volume tertiary care center experience. Pak J Med Sci 2017;33(5):1074.
14. Mansour I, Mousa D. Incidence rate and outcome of placenta previa at maternity hospital in madinah, kingdom of Saudi Arabia: A retrospective study 2016-2017. Int J Clin Obstet Gynaecol 2019;3(5): 207-212.
15. Papanikolaou I, Domali E, Daskalakis G, Theodora M, Telaki E, Drakakis P, et al. Abnormal placentation: Current evidence and review of the literature. Eur J Obstet Gynecol Reproductive Biol 2018;228:98-105.
16. da Cunha Castro E, Popek E. Abnormalities of placenta implantation. APMIS 2018;126(7): 613-620.
17. FOX K, LEE W. Prenatal Diagnosis and Evaluation of Abnormal Placentation. Clin Obstet Gynecol 2017;60(3):596-607.